

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (Currently Amended): A method of measuring dimensions and alignment error of thin film magnetic heads formed on a row bar cut-off from a substrate, comprising the steps of:

illuminating a magnetoresistance effect element and a resistance detector element which is formed for monitoring a lapping process, both of which are formed on the ~~substrate~~row bar, with illuminating light whose wavelength is 300 nm or less;

forming an image by imaging light reflected from said elements;

converting said image to an image signal through photoelectric conversion;

and

detecting dimensions ~~and alignment error~~ of the magnetoresistance effect element and the resistance detector element formed on the ~~substrate~~row bar by processing said image signal, and calculating alignment error between the magnetoresistance effect element and the resistance detector element from said image signal~~detected dimensions~~.

Claim 2 (Previously Presented): A method according to claim 1, wherein the illuminating light includes a wavelength component of 248 nm.

Claim 3 (Previously Presented): A method according to claim 1, wherein the illuminating light includes a wavelength component of 266 nm.

Claim 4 (Previously Presented): A method according to claim 1,
wherein the illuminating light includes a wavelength component of 213 nm.

Claim 5 (Cancel)

Claim 6 (Previously Presented): A method according to claim 1,
wherein the magnetoresistance effect element and the resistance detector element
are covered with end face protection films.

Claims 7-10 (Withdrawn)

Claim 11 (Currently Amended): An apparatus for measuring
dimensions and alignment error of thin film magnetic heads formed on a row bar cut-
off from a substrate, comprising:

a light source for emitting light whose wavelength is 300 nm or less;

illuminating means for illuminating a magnetoresistance effect element and a
resistance detector element which is formed for monitoring a lapping process, both
of which are formed on ~~a substrate~~ the row bar, with illuminating light emitted from
said light source;

imaging means for obtaining an optical image of ~~said substrate~~ the row bar,
illuminated by said illuminating means;

image pick up means for converting ~~[[an]]~~said optical image of ~~said~~
~~substrate~~the row bar, which is imaged by said imaging means, to an image signal
through ~~photoconversion~~photoelectric conversion; and

~~detecting~~ means for detecting dimensions ~~and alignment error of~~ said
magnetoresistance effect element and said resistance detector element formed on
the ~~substrate~~ row bar by processing said image signal obtained by said image pick
up means, and for calculating alignment error between said magnetoresistance
effect element and said resistance detector element from ~~said image signal that is~~
~~obtained by said image pick up means~~detected dimensions.

Claim 12 (Previously Presented): An apparatus according to claim 11,
wherein said light source emits light having a wavelength of 248 nm.

Claim 13 (Previously Presented): An apparatus according to claim 11,
wherein said light source emits light having a wavelength of 266 nm.

Claim 14 (Previously Presented): An apparatus according to claim 11,
wherein said light source emits light having a wavelength of 213 nm.

Claims 15-16 (Cancel)

Claims 17-19 (Withdrawn)

Claim 20 (Previously Presented): A method according to claim 1,
wherein the illuminating light has a wavelength of 200 nm.

Claim 21 (Currently Amended): A method according to claim 1,
further comprising a step of displaying the measured results at least one of the
variations in dimensions of the elements or distribution of alignment error on a
display.

Claim 22 (Currently Amended) An apparatus according to claim 11,
further comprising a display for displaying the measured results at least one of the
variations in dimensions of the elements or distribution of alignment error.